Amendments to the Drawings:

A replacement drawing sheet for Figures 2 and 3 is enclosed. Figure 2 has been amended to add a sensor **60** as referred to in the specification.

REMARKS/ARGUMENTS

Claims 1 and 3-33 are now pending after entry of the above amendments. Claims 4-8, 20-26, and 28 were indicated to be drawn to allowable subject matter. Claims 1, 2, 9, 11-19, 31, and 33 were rejected as unpatentable over U.S. Patent Application Publication 2004/0119291 to Hamrin et al. in view of either admitted prior art or U.S. Patent No. 4,754,607 to Mackay. Claims 1-3, 9-19, 27, 29, and 31-33 were rejected as unpatentable over JP 06-108879 in view of either admitted prior art or Mackay '607. Claims 1, 2, 9, 11-19, 29-31, and 33 were rejected as unpatentable over U.S. Patent Application Publication 2002/0148227 to Mackay in view of admitted prior art or Mackay '607.

Applicant appreciates the indication of allowable subject matter in Claims 4-8, 20-26, and 28. However, for the reasons given below, Applicant respectfully submits that all pending claims are patentable over the cited references.

Claim 1 has been amended to recite a system operable to direct a portion of turbine exhaust gases into the compressor during part-load and full-load operation of the gas turbine engine, such that the mixture discharged from the compressor is raised in temperature by said exhaust gases, whereby an inlet temperature to the catalytic combustor is raised, wherein said system comprises a valve that is controllable to variably adjust a flow rate of the exhaust gases into the compressor, and a control system operably connected to the valve. The Office Action asserted that Hamrin, JP '879, and Mackay '227 each discloses an engine system having a controllable valve and control system for variably adjusting the exhaust gas flow rate. Applicant submits that this is incorrect.

More specifically, the Office Action asserted that Hamrin discloses a system including a valve **326**, and that the valve **326** is controllable to variably adjust a flow rate of exhaust gases into the compressor. Applicant disagrees. Hamrin is directed to the problem of *starting* a gas turbine engine system having a catalytic combustor. Hamrin discloses recirculating exhaust gas to the compressor during a start-up phase of operation. However, once the combustor catalyst has reached its light-off temperature, the recirculation of exhaust gas is discontinued (see Claim

15). Thus, Hamrin does not teach or suggest recirculating exhaust gas to the compressor during part-load or full-load operation as required by Claim 1.

Additionally, in paragraph 22, Hamrin describes that during a cold start, the three-way valve **326** is actuated to divert exhaust stream **100** into the compressor. The exhaust stream **100** comprises the full amount of exhaust gas exiting the recuperator **23**. There is nothing in Hamrin disclosing or suggesting that the valve **326** is used to regulate the flow rate—its only function is to either divert all of exhaust stream **100** back to the compressor or to allow the exhaust stream to be discharged normally such that zero exhaust gas is recirculated. (Incidentally, Hamrin notes that three-way valve **326** can be replaced by two-way valves **322, 324**, but never suggests that either valve is controllable for variably adjusting flow rate of the exhaust gas recirculated to the compressor.) Thus, Hamrin does not teach or suggest the invention of Claim 1.

Based on the English translation of JP '879, in the embodiment of Figures 3 through 6, there is exhaust gas recirculation to the compressor *only during the start-up mode* (Figure 3) during which conventional flame combustion is taking place while the catalyst is heating to its proper operation temperature. The "trigonal valve TV" in Figure 3 allows exhaust gas to be recirculated to the compressor during the start-up phase, but there is nothing in JP '879 suggesting that the valve is controllable to variably adjust the flow rate of the exhaust gas into the compressor. Additionally, once the catalyst is operating, the system is switched from the start-up mode to the standard mode (Figure 4). In the standard mode, there is no recirculation of exhaust gas to the compressor. Thus, as in Hamrin, the valve TV is either open or closed to the compressor, but is not variably adjustable during standard (part-load or full-load) operation. It is thus evident that JP '879 does not teach or suggest the invention of Claim 1.

Mackay '227 discloses a multi-pressure-mode gas turbine engine system. In the embodiments of Figures 7 and 8 Mackay discloses a low-power valve **21** through which exhaust gas is directed back into the compressor. In Figures 6, 9, and 10 Mackay discloses a mid/low-power valve **46** through which exhaust gas is directed back into the compressor. The Office Action asserts that the valve **21, 46** is controllable for variably adjusting flow rate of exhaust gas

to the compressor. This is incorrect. The valve **21, 46** is either open or closed depending on the pressure mode in which the system is operating (see paragraphs 77 and 78, which explain that the various valves used in Mackay's system are either open or shut). Nothing in Mackay teaches or suggests that the valve **21, 46** is controllable for variably adjusting the flow rate of exhaust gas recirculated to the compressor.

For the above reasons, it is submitted that Claim 1, and Claims 3 and 9-11 dependent thereon, are patentable over the cited references.

Claim 12 has been amended to recite that during part-load and full-load operation of the gas turbine engine the fuel is passed through the compressor along with the air and the portion of exhaust gases, and a flow rate of the exhaust gas is variably adjusted using a controllable valve. In contrast, in Hamrin and JP '879 the exhaust gas is recirculated to the compressor only during a start-up phase of operation, and in none of the cited references is the flow rate of exhaust gas variably adjusted using a controllable valve, as already explained. Thus, Claim 12, and Claims 13-19 and 27-33 dependent thereon, are patentable over the cited references.

Claim 4 and Claim 20, which were both indicated to be allowable in subject matter, have been amended to be in independent form. Accordingly, Claims 4-8 and Claims 20-26 should be in condition for allowance.

Conclusion

Based on the above amendments and remarks, it is submitted that the application is in condition for allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 22, 2005

Nancy McPartland

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